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Access to Outpatient Services in the Military Health System (MHS): Case Study at a U.S. Army Medical Center

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Abstract

This study examines access to outpatient services at William Beaumont Army Medical Center for all beneficiary groups in Adult Primary Care, Pediatrics, General Outpatient/Emergency Room, Physical Therapy and Dermatology clinics. Analysis suggests that a large proportion of outpatient capacity is either unplanned (walk-ins averaged 21% of visits), or is not being used (25% unbooked and 11% cancellation/no-shows on average). More effective use of the patient appointing process is required for clinics to exert more control over workload distribution and increase operating efficiency. Clinics booked over half of all new appointments, although a contractor had been paid to schedule these visits; this workload must be shifted to the contractor. Overall, however, the observed clinics showed improvement in awareness of TRICARE and accommodation of prime enrollees' demand for services. Prime enrollees made up a slightly larger proportion of total visits as enrollment increased, and prime referrals to the network decreased dramatically as clinicians more intensively managed their care within the facility. Additionally, increasing use of the general outpatient clinic by non-prime suggests that their access to the primary care clinics has lessened as prime enrollees are better accommodated. These results indicate progress toward effectively managing the health of the enrolled population.

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Introduction

As managed care increasingly dominates the American health care scene, health care organizations of all shapes, sizes, and missions are altering core processes and searching for efficiencies to ensure their continued survival. The effect of this transformation on academic medical centers, such as the subject of this study, has been particularly profound, given their traditional focus on inpatient and tertiary care in a fee-for-service environment. Academic medical centers have had to redefine strategies, placing a greater emphasis on developing their primary care base, vertical integration, and managing high-cost specialty care. (Chessare & Herrick, 1996). This requires adequate systems for providing patients initial access to primary care managers to whom they are empanelled, and expeditious, detailed referrals to specialty care when needed; excellent communication is key (Chessare & Herrick, 1996).

Conditions Which Prompted the Study

The advent of managed care in the military has come in the form of the Department of Defense (DoD) TRICARE program

(DoD Quality Management Report, 1995), characteristic of the most recent paradigm of "managerial efficiencies, market forces, and downsizing" in military medicine (Brown, 1994, p. 625). The military health system's (MHS) strategic plan includes implementation of TRICARE, based on civilian managed care standards, to increase capacity for meeting the growing demands on the MHS, with the overarching concern of becoming more focused on customer needs (Status of Military Medicine, 1997; Tomich, 1997).

With the recent implementation of TRICARE in the Central Region in April 1997, William Beaumont Army Medical Center (WBAMC) faces many of the challenges associated with shifting from a traditional inpatient and tertiary care focus, to that of ensuring access to primary care managers for an enrolled population. As has been noted in other teaching hospitals, this institution must address the competing priorities of patient services, community service, and research (Mintzberg, 1997). Long accustomed to providing quality health care, WBAMC must now examine availability and accessibility of services for its enrolled population and others, as capacity permits, to meet its customers' needs. In fact, some research has suggested that good access to care is a prerequisite for high-quality health care, and that patients' self-reported perceptions are reliable access indicators (Stewart et al., 1997).

Statement of the Problem

Access is the first of four major functional areas designed to measure MHS--previously military health services system (MHSS)--beneficiary satisfaction (MHSS Report Card, 1997). Effective leadership requires setting priorities based on defining what is important to the organization and its customers, and identification of those tasks or processes which are critical to accomplishing these things (Brown, 1994; McGee & Hudak, 1995; Network News, 1997). Clearly, inclusion of access as a major indicator of performance in the MHS Report Card attests to its integral role in satisfying the customers of our health care system. Lest anyone be confused about the priorities, the Assistant Secretary of Defense for Health Affairs (ASD(HA)) has explicitly stated on multiple occasions that enhancing access is our top priority (Grady, 1995; Joseph, 1997; Sunshine, 1997).

Yet MHS indicators have shown that customers have been, and continue to be, less than fully satisfied with access to health care in military medical treatment facilities (MTF) (DoD Quality Management Report, 1995; Tilson, 1996; Joseph, 1997). In order to better meet TRICARE access standards and fulfill our customers' expectations, ASD(HA) has refined policies for access priorities and convenience of attaining after-hours services (ASD(HA) Policy 96-060, 1996; ASD(HA)

Policy 97-041, 1997; Joseph, 1997). Assessment of MTF processes affecting access to our services, then, may be a key to determining effectiveness of MHS business practices and to making future management decisions. If we are able to delight our beneficiaries with efficient, timely access to the appropriate services, then customer satisfaction will likely improve. And failure to do so will ensure dissatisfaction with perceived access (DoD Quality Management Report, 1995; Tilson 1996).

Literature Review

An initial Government Accounting Office (GAO) report indicated that implementation was progressing well, but emphasized the need to monitor the program to determine its effectiveness in caring for beneficiaries (Military Health Care, 1996). The need for customer focus may seem self-evident in a service industry such as health care, but too often patients find themselves captive to a system which may not be convenient for them, or even meet their needs. So the point is worthy of attention.

One recent study reports that health care has lagged behind other service industries in this regard, but suggests that orienting toward customer needs is just as important in health care as with any other service (Network News, 1997). The topic of customer satisfaction reverberated throughout this year's TRICARE conferences, with the resounding message

that success of the MHS will lie in meeting customers'--both beneficiary and line commander--needs (Joseph, 1997; Tomich, 1997). Meeting those needs will require critical analysis, and restructuring as necessary, of key processes and management functions, to ensure efficient, effective, and integrated services (McGee & Hudak, 1995; Chessare & Herrick, 1996; Joseph, 1997; Mintzberg, 1997; Network News, 1997; Status of Military Medicine, 1997).

Multiple measures of success are suggested in the literature for customer service and, specifically, access to health care. Stewart et al. (1997) demonstrated a number of metrics, including convenience of getting care at a regular place, but also suggested that many other factors may be important. They posited that patients' unfamiliarity with the system and patient-provider trust may be among the factors influencing perceptions of access to care. Interestingly, their study indicated that, when optimal care is received at a regular place of care, having a regular provider did not affect satisfaction, which would support the notion of a "team" approach of empanelment (Stewart et al., 1997). Several other studies have emphasized the importance of ensuring accessibility of outpatient services in specific clinical settings, including primary care, specialty care, and emergency services (Grumbach, Keane, & Bindman, 1993; Fieselman & Hendryx, 1994; Imai & Schydlower,

1994; Kellermann, 1994; Franco, Mitchell, & Buzon, 1997; Owen, Maeyens, & Weary, 1997). The MHS Report Card's measures include specific indicators of patient satisfaction with access to appointments and system resources (MHSS Report Card, 1997).

Former ASD(HA) Stephen Joseph (1997) stressed the importance of fully using military MTF capabilities to provide cost-effective care and satisfy beneficiaries. He suggested local indicators of the MTF's success in optimizing resources, such as the rate of enrollment to the network when MTF capacity exists; barriers to care associated with outpatient capacity and convenience of making an appointment; and the acid test of meeting TRICARE access standards for enrolled beneficiaries (ASD(HA) Policy 97-041, 1997; Joseph, 1997). With an enrolled population under TRICARE prime, MTF commanders have a defined group of beneficiaries for whose care they are directly accountable; and this will have even greater significance when funding under enrollment-based capitation (EBC) allocates resources for fiscal year 1999 based on this empanelled group (Joseph, 1997; Tomich, 1997). Therefore, it benefits the MTF and its customers to optimize accessibility and efficiency of services within the MTF. Additionally, Grey and others have shown appointment systems to be a major source of dissatisfaction among beneficiaries (Tilson, 1996). Care may

be provided for other non-enrolled beneficiaries based on the space available after priority care allocated for prime enrollees. Care for Medicare-eligible retirees, who are ineligible for TRICARE, and for those eligible but not enrolled, may become less accessible in military MTFs as these facilities focus on optimizing resources for enrolled members. While military MTFs currently receive only minimal funding based on historical levels of effort (LOE) provided for care of Medicare-eligibles, future funding may be allowed for care above that LOE, if Medicare subvention is approved (Subvention, 1997). Studies of accessibility should consider the MHS priorities and funding implications of care for these different groups.

Purpose of the Study

The purpose of this study is to examine access to outpatient services at WBAMC for all beneficiary groups, and determine whether the mix of patients seen indicates sound business practices under TRICARE.

Methodology

The researcher employed an embedded multiple-case study approach to analyze patient appointment records and clinic procedures (Yin, 1994). The researcher compared Composite Health Care System (CHCS) records of patient visits with various other sources of data to determine how well system capacity is meeting customer demand and whether clinic

business practices are fiscally sound. Clinics selected for study included primary and specialty care clinics: Adult Primary Care (APC), Pediatrics (Peds), General Outpatient/ Emergency Room (GOC/ER), Physical Therapy (PT) and Dermatology (Derm). These clinics were selected as representative of outpatient services due to their high volume of appointments relative to other WBAMC clinics, as well as anecdotal evidence suggesting that access to those clinics may be inadequate for TRICARE prime enrollees. CHCS ad hoc reports were run to collect data during four separate months (May, August, and November 1997 and February 1998), spanning the initial four quarters since TRICARE implementation on 1 April 1997.

Other data sources included TRICARE Service Center (TSC) telephone appointment system reports; records of outpatient referrals to the network; clinic appointment templates; interviews with appointment clerks, managerial staff, and clinic chiefs; and personal observations of clinic operations and various management forums. A phased conversion of WBAMC information systems brought the CHCS patient appointment system (PAS) fully on line by May 1997, with other modules implemented by October 1997 (Rutan, 1997). Thus, while data were available during the selected months, the researcher was unable to determine whether practice patterns changed pre- and post-TRICARE.

Areas and Processes to be Studied

WBAMC is a 207-bed tertiary care teaching facility providing a full range of primary and specialty inpatient and outpatient services in a managed care environment. It operates nearly sixty outpatient clinics and employs approximately 1700 military and civilian staff members. WBAMC serves an eligible beneficiary population of nearly sixty thousand, in addition to providing regional referral services for DoD MTFs and emergency services to the local community as required. Table 1 depicts total eligible beneficiaries, by category, within the catchment area (approximately a 40-mile radius from WBAMC). Of these beneficiaries, about 51,000 (non-Medicare) are eligible for TRICARE Prime enrollment.

TABLE 1

WBAMC CATCHMENT AREA POPULATION*

BENEFICIARY CATEGORY	POPULATION	% TOTAL
Active Duty (AD)	9,981	16.4%
AD Family Members	18,373	30.2%
Retirees/Family Members	22,850	37.6%
Medicare-Eligible (>64 yrs)	9,616	15.8%
TOTAL:	60,820	

*Source: Resource Analysis and Planning System (RAPS) 1997

Portals of entry to care within WBAMC outpatient services include a central patient appointment system (PAS) operated by the TRICARE Service Center (TSC), phone calls directly to the hospital's more than fifty clinics, or walk-in visits. While each clinic provides unique services through its own operating procedures and protocols, some basic tenets of accessibility apply universally. The managed care support contract (MCSC) and implementing agreements apply access standards (Table 2), and define roles and responsibilities for making appointments to WBAMC clinics (DoD OCHAMPUS, 1996).

TABLE 2

TRICARE PRIME ACCESS STANDARDS*

SERVICES REQUIRED	ACCESS STANDARD
Urgent Care	Within 24 hours
Routine Care	Within 1 week
Preventive/wellness Visits and Specialty Referrals	Within 4 weeks

*Required standards for prime enrollees; goals for others.

Clinics must meet these access standards for prime beneficiaries or refer the patient through the TSC to the civilian network for care, at a higher cost to the MTF, the contractor, and the patient. The MCSC designates responsibilities for booking clinic appointments based on

the type and recurrence of visits. The TSC should book all new appointments (not generated by a previous visit for the same condition), specialty referrals, and continuing care appointments (generated by a previous visit for the same condition, but more than five weeks apart). WBAMC clinics are responsible for booking follow-up appointments (generated by a previous visit for the same condition, within five weeks).

The Adult Primary Care (APC) clinic provides primary care for AD assigned to duty at WBAMC and all non-AD beneficiaries, as well as internal medicine specialty care for all eligible beneficiaries. APC providers include permanently assigned military and civilian staff physicians and other clinicians, as well as rotating interns and residents. It is one of three primary care manager (PCM) empanelment sites for TRICARE Prime enrollment. (The other sites are the Consolidated Troop Medical Clinic (CTMC) for AD not assigned to WBAMC, and Pediatric Clinic for children age 17 and under.)

The Dermatology (Derm) clinic is a specialty clinic scheduled on a referral basis for routine and follow-up care. Services not requiring a referral include a walk-in "wart clinic" two afternoons a week and skin cancer screening three times per week, by appointment.

The General Outpatient Clinic (GOC) is an extended-hours (generally 0700-2200) acute care clinic collocated with the emergency room (ER) to evaluate and provide episodic care for non-urgent, ambulatory patients. The GOC augments ER capabilities by assessing and treating, as necessary, those patients presenting to the ER whose conditions do not require emergent care. It is also an alternate site of care for TRICARE prime enrollees after normal operating hours and other beneficiaries as space is available, on a same-day appointment or walk-in basis.

The Pediatrics (Peds) clinic provides primary care services to children (age 0-11) and adolescents age (12-17). As noted earlier, it is one of three TRICARE prime PCM enrollment sites. In addition to primary care, the clinic provides some specialty appointments for such problems as gynecological, endocrine, and counseling referrals. The clinic schedule operates on a routine and same-day appointment or walk-in basis; an extended-hours clinic (1700-2100 weekdays; 1000-1400 weekends) offers acute care for those who become suddenly ill. One change occurred during the observation period consolidating the pediatric and adolescent clinics, which had been collocated but separate. This change had no effect on clinic operations, but did affect their appearance in CHCS for appointing, so clerks may now have to search for specific appointments.

The Physical Therapy (PT) clinic offers referral services for rehabilitation from injuries or other conditions limiting motion/functionality. Services may be provided by physical therapists or PT technicians, depending on severity of the patient's condition and modalities required. The clinic operates from two locations, within WBAMC and the CTMC; only the hospital-based clinic is studied here.

Normal business hours for each of the clinics, unless otherwise specified, are 0730-1630, Monday through Friday. Extended hours are any times falling outside this normal duty day, including weekends and holidays.

Procedures and Operational Definitions

Data were pulled from CHCS using ad hoc reports to identify users of WBAMC outpatient services during the four given months in selected clinics. Monthly and composite data were examined and compared to identify areas of concern within each clinic. Monthly data were used to identify any proportional trends or changes throughout the research period, and composite data to illustrate discrepancies between clinics. Additional data from CHCS ad hoc queries were then analyzed to determine the proportion of appointments booked through the TRICARE Service Center (TSC) versus directly through the clinics. The TRICARE Central Region Managed Care Support Contractor (MCSC) provided TSC

call-in appointment system usage reports for the selected months, as well as referral reports for physical therapy and dermatology. Comparison of these reports with clinic utilization data provides an indication of the efficacy of clinic appointment scheduling and referring practices. This analysis requires detailed definition of the sorting and coding used to categorize the data.

"Total appointments" is the clinic's sum total of all scheduled and unscheduled appointment statuses occurring in a given month. It includes all the categories of appointment status defined in this paragraph. "Appointed visits" includes every appointment which was scheduled in advance and kept by a patient (CHCS status "Kept"). "Walk-ins" are those patient visits to a clinic which were unscheduled prior to the appointment time; these visits are statused as walk-in in CHCS upon being seen in the clinic. One exception to the above two categories occurred in the emergency room where, although no visits are scheduled in advance, patients are entered upon arrival as if scheduled and entered as "Kept" after treatment. "Tel-con" status indicates a telephonic consultation with a provider in a clinic. "Admin/Occ Svc" are administrative and occasional service encounters which are not counted for workload purposes. Administrative time may include clinic training, meetings or personal staff use. Occasional service visits are patient

contacts for minor issues--such as routine prescription refills, a technician drawing blood, or taking an x-ray--which do not require independent clinical assessment, and thus do not warrant credit for a clinic visit (G. Smith, personal communication, April 1, 1998). Generally, telephonic consults of less than 15 minutes' duration are considered as occasional service as well. "Cancellations/No Shows" are scheduled patient visits which did not occur as scheduled. This status may result from a facility or patient cancellation, from a patient's failure to present for the visit, or from the MTF's failure to notify the patient of an appointment scheduled or changed. "Actual visits" is not an appointment status, but simply a subset of total appointments reflecting only appointed visits, telephonic consultations and walk-ins (actual clinic visits resulting in workload credit) (SAIC, 1996).

Each of the categories identified above is arrayed as raw data and a percentage of total appointments, and then further stratified by Alternate Care Value (ACV) codes as assigned by the Defense Eligibility and Enrollment Reporting System (DEERS). Four DEERS/CHCS-defined ACV codes were used: A (Active Duty); C (CHAMPUS-eligible but not enrolled in TRICARE); E (TRICARE Prime Enrolled); and N (Not CHAMPUS-eligible). One additional code, M (Medicare-eligible), was added by the researcher to estimate the level of effort

expended toward treating those patients age 65 and over. All cases not labeled as one of the above were coded as "Blank."

Once these data were summarized for total appointments, actual visits were stratified to identify the actual users of these clinics. Sorting by ACV revealed eligibility/ enrollment status of beneficiaries using the clinics. Defense Medical Information System Identification (DMIS ID) codes showed the facility to which prime beneficiaries were enrolled. A relatively high proportion of DMIS ID "No Code" cases reflected the percent non-prime patients seen. Zip Codes were used to identify the location of patients' residences. DMIS ID and zip codes comprising less than one percent of the total actual visits were deleted, and re-coded as "Other". An array of the above measures provided a demographic snapshot of outpatient clinic users, as well as indicating system operational efficacy.

Validity and Reliability

Validity and reliability of data collected for the study were largely assumed, due to the standard DoD-wide system, the Composite Health Care System (CHCS), used as the appointment data source. The ad-hoc query syntax developed for data retrieval was tested on a pilot sample and applied uniformly to each of the clinics involved in the study. Additionally, sample collection by two independent operators yielded identical results, indicating data reliability.

Data, once retrieved, were cross-tabulated in multiple iterations to verify consistency of the results, indicating data reliability. Data summaries were then reviewed by clinic chiefs to validate their accuracy in illustrating actual clinic experience.

Limitations and Assumptions

A recognized limitation of the CHCS data is the potential for human input error. This error was assumed to be small, as no gross indicators of errant entries were discovered. The most common error noted was missing data entries, particularly in defining locations of patient enrollment and residence. Of less concern were errors in coding the data which had been entered. The researcher introduced a small amount of error into the data by re-coding all patients age 65 and over as Medicare-eligible. No data were available to directly identify the level of effort expended in treating Medicare patients, requiring use of the age variable. The researcher acknowledges the fact that a small percentage of beneficiaries age 65 and over are Civilian Health and Medical Program of the Uniformed Services (CHAMPUS)-eligible vice Medicare. This percentage--estimated by WBAMC's health benefits advisor as less than one percent (R. M. Thoreson, personal communication, March 31, 1998)--is an acceptable error in estimating the Medicare level of effort. Finally, less than one percent of Pediatric

Clinic appointments were coded as active duty visits, resulting from two sources. About three fourths of these cases were erroneously assigned to the sponsor rather than the child being seen; the remainder were correctly coded as active duty visits for genetics counseling.

Clinic appointment templates were assumed to be based on equitable distribution of workload within appropriate practice standards; clinic and provider productivity were beyond the scope of this study. Also assumed is that the observed months are representative of monthly visits within their respective quarters, and that seasonal trends, if present, were negated by using proportional data. Interactions with clinic staff were limited to only the researcher using a consistent approach.

Results

The primary result of this study was to identify those beneficiary groups, by category, utilizing outpatient services. Analysis of these results revealed opportunities to improve operating efficiency for some clinics, illustrated the effects of management decisions in others, and defined the levels of effort expended in each clinic for the various beneficiary groups. Summary data for all clinics, including a four-month roll-up and individual monthly totals, are displayed at Appendix A. Each clinic's four-month roll-up data are also arrayed at Appendices D-F,

for APC, Derm, GOC/ER, Peds, and PT, respectively. While each of these clinics will be discussed in more detail later, it is appropriate here to outline the system through which beneficiaries access the majority of WBAMC outpatient services.

The primary care process (Figure 1) begins with a patient phone call or visit to the MTF. New appointments, based on a patient-determined need, are scheduled through the TSC; follow-up visits, as directed by a provider, through the clinic. (In practice, patients often schedule new appointments directly through the clinics, circumventing this process.) If a clerk answers, an appropriate appointment is generally scheduled. When no appointments are available to book, the clerk will forward basic information to a provider, usually a clinic nurse, who will attempt to meet the patient's need. If received in the clinic, the call may be handled verbally during the initial contact; otherwise, a note or fax goes to the provider to return the beneficiary's call and assess immediacy of need. This clinician will either telephonically resolve the concern, overbook a visit to the clinic, or advise the individual to walk in to the clinic or ER or seek care elsewhere, depending on the beneficiary's condition and status.

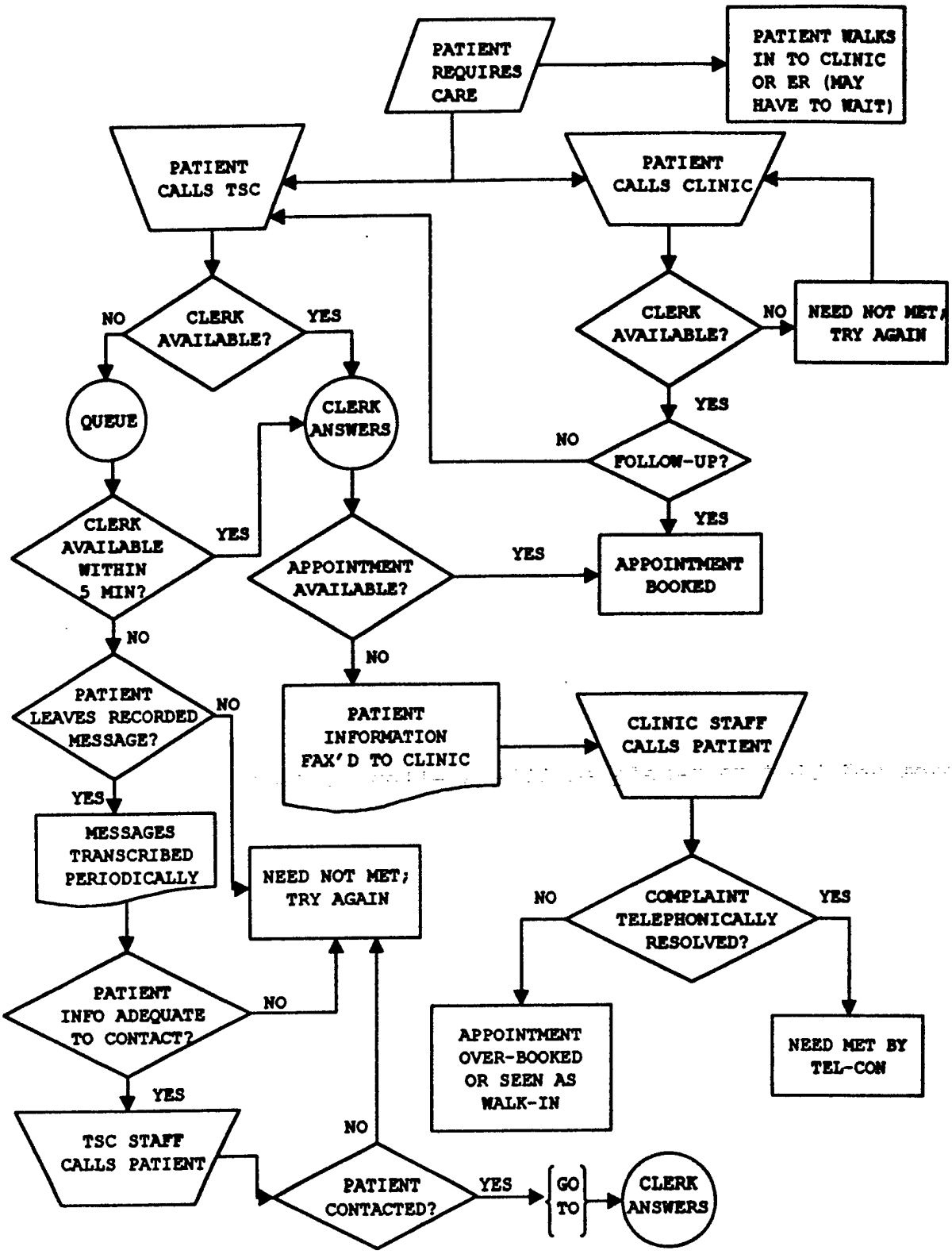

Figure 1. Primary care appointment process.
Flow chart symbols adapted from Gilbert (1990).

The scenario changes somewhat, however, if a clerk is not available to take the call. Calls to the clinic in this case will go unanswered, and the patient must continue trying until a clerk becomes available. This limitation attenuates the need for clinics to shift workload to the TSC for all new appointments, as stipulated in the contract. Calls to the TSC which are not answered by a person are automatically transferred to a queue awaiting the next available operator. If none is available within five minutes, and the call has not yet been abandoned, the caller is offered the opportunity to leave a recorded message, or the call is forwarded to the MCSC headquarters in Phoenix. Although it may be argued whether or not this system provides adequate service, it meets the contract requirement that no callers will be placed on hold for more than five minutes (DoD OCHAMPUS, 1996). Assuming that the patient is patient and leaves adequate information, TSC staff will periodically check recorded messages and return the patient's call to book an appointment. Calls should be returned within ninety minutes, but actual times may range from one to several hours.

In the case of specialty care (Figure 2), the need is initially established by a referring care provider (usually primary care). The referral is then evaluated and either substantiated or redirected by the receiving specialist.

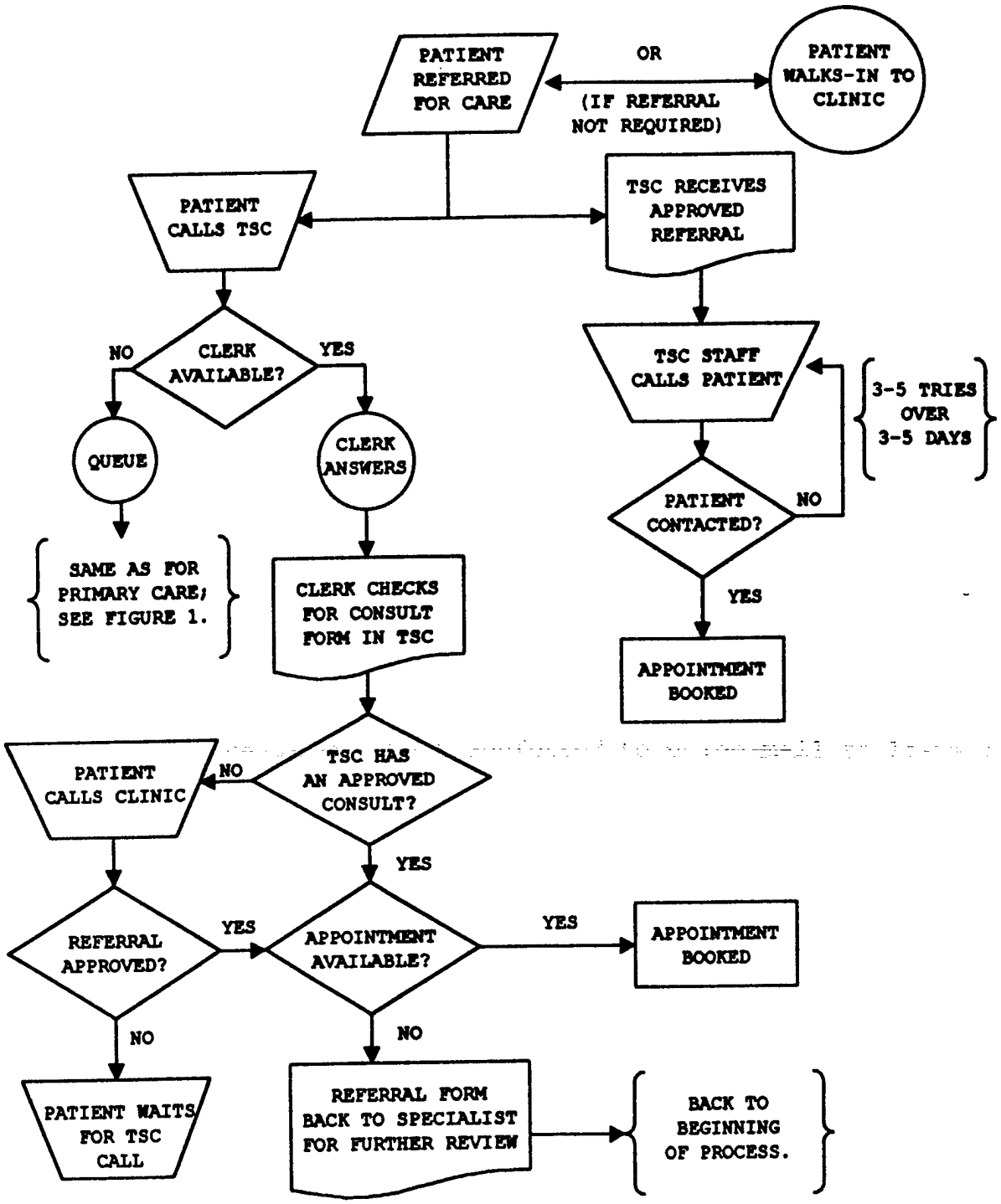

Figure 2. Specialty care appointment process. Flow chart symbols adapted from Gilbert (1990).

Though not directly observed in this study, the time involved in the referral process becomes a limiting factor in the appointing process. Specialty care visits are appointed much like primary care, except that the clerks must have an approved referral to book an appointment. If the referral has not been approved, the patient may then have to either wait or call the referring and/or receiving clinics to determine its status. Most preferably, the TSC will receive approved referrals within 24 hours and call the patient within 72 hours of the initial visit.

The processes for appointing primary and specialty care visits, as outlined at Figures 1 and 2, may require multiple calls or waiting in a queue up to five minutes to speak with a person. And if not answered within five minutes, patient calls may be transferred to voice mail to leave a message. Telephone reports generated by the TSC's automated call distribution (ACD) system, as summarized in Table 3, indicate that sufficient trunks are available for the calls received but nearly two thirds of calls are placed in a queue before being answered. While the speed of answering calls averaged about one minute, the reports did not reflect the number of calls answered by voice mail or the number of calls abandoned, nor did it address peak operating hours.

TABLE 3

TRICARE SERVICE CENTER TELEPHONE REPORT

	% All Trunks Busy	Total Calls Received	Total Calls Placed In Queue	Average Speed Answered (min)
May-97	0%	9,403	5,836	1.33
Aug-97	0%	16,856	11,608	1.08
Nov-97	0%	10,476	5,466	1.30
Feb-98	0%	10,510	7,817	0.52
Total	0%	47,245	30,727	1.05

For the two pure specialty referral clinics, dermatology and physical therapy, the summary data were compared with total referrals to the network. The number of referrals to these clinics sent out from WBAMC to the TRICARE network during the given months, was categorized as prime or non-prime and provided by the TSC for comparison (Table 4). Such analysis revealed distinctly different referral patterns between these two clinics, indicative of the challenges facing providers who must deliver appropriate

TABLE 4

REFERRALS TO THE TRICARE NETWORK

	Dermatology			Physical Therapy		
	Total	Prime	% Prime	Total	Prime	% Prime
May 97	71	45	63%	13	6	46%
Aug 97	31	17	55%	46	34	74%
Nov 97	19	1	<1%	27	16	59%
Feb 98	13	0	0%	6	3	50%

care given constrained resources. Each of these clinics, facing unique challenges and operational nuances, has progressed toward meeting the needs of the enrolled population while also providing care when available to other beneficiaries. Similarly, Figure 3 shows that as the percent of the eligible population enrolled in TRICARE Prime has increased slightly over the past year, so has Prime representation among the actual patient visits for all outpatient clinics studied.

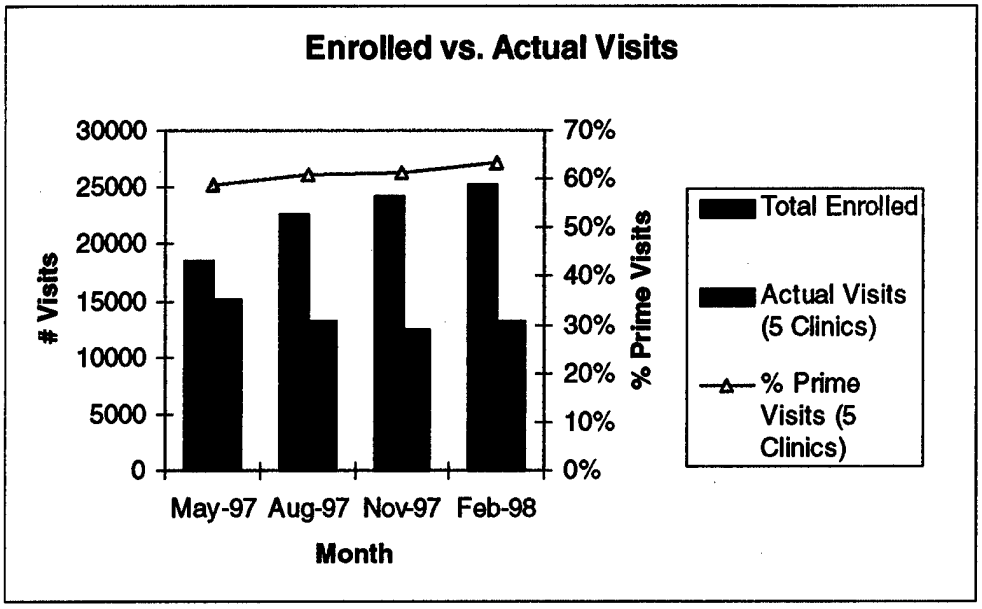

Figure 3. TRICARE Prime enrollees as a proportion of the eligible population and actual patient visits.

A final measure used in this study to demonstrate system performance was the number appointments, by type, booked by the clinics versus the TSC (Figure 4). These data were collected on all WBAMC outpatient clinics during a three-month period (Jan 98-Mar 98), and include only those appointments which could be definitively re-coded as new or follow-up. WBAMC clinics booked over 80% of all appointments within the facility during these three months, and 60% of initial appointments, which should be booked through the TSC (DoD OCHAMPUS, 1996).

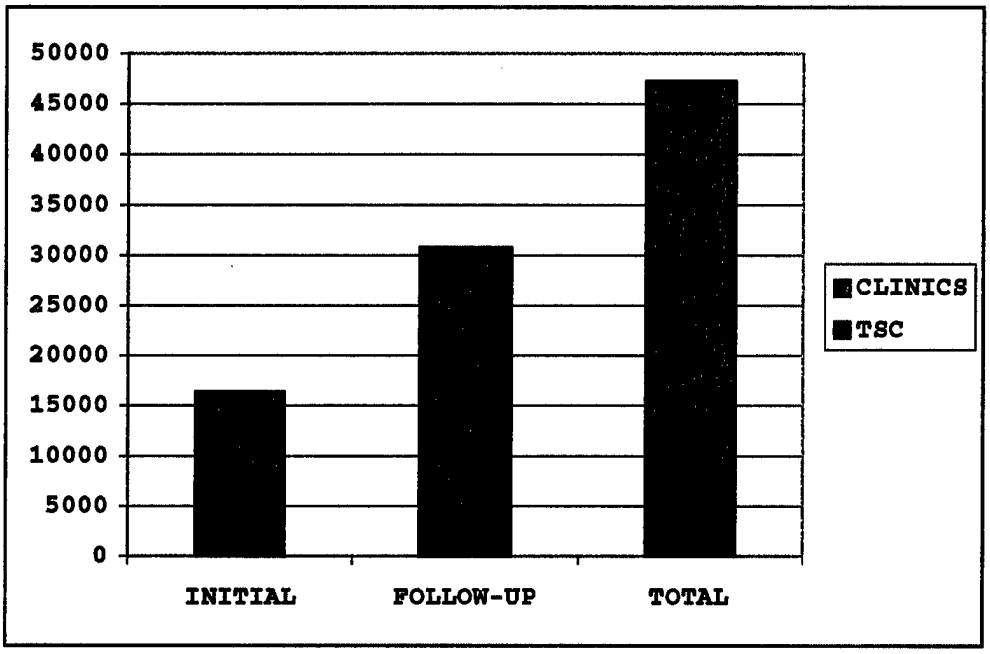

Figure 4. Appointments, by type, booked through WBAMC clinics versus TSC.

Discussion

While performance and trends varied significantly between clinics, a few key indicators emerged, as noted in Appendix A. The ratio of actual to total visits (and, conversely, the cancellation/no-show rate) suggests that about eleven percent of outpatient capacity is not being used. The percentages of total visits which are appointed (64%) versus walk-in (21%) are similarly related, indicating that over a third of total visits are chance occurrences vice planned events. Add to this the number of appointments, available by clinic templates, which went unbooked (ranging

from less than 10% to over 50% among clinics studied) and the randomness of patient contacts is staggering.

Some of this failure to effectively schedule visits may be due to a lack of trust in the PAS by clinic personnel. Interviews with clinic staff revealed a strong sense of frustration over what they perceive as a lack of personal contact and coordination in dealing with the TSC. Overly restrictive limits on MTF staff coordination with MCSC staff, aimed at avoiding inadvertent contract modifications, seem to have created barriers from the outset of TSC establishment which have taken months to overcome. Much of the problem, however, derives from within the clinics. Changes to clinic templates on short notice, failure of some clinics to maintain five-week rolling schedules, and excessive "clinic use only" time limit the availability of appointments to be booked and create unfilled appointments. Clinic protocols must clearly define specific scheduling procedures, and be updated as changes affect services provided. In the case of specialty care, the appointing process is often held captive awaiting review and approval by the receiving clinic.

There are other problems within the patient appointing process, to be sure. One glance at Figures 1 and 2 illustrates the multiple connections and interactions which must occur to link patient with provider. Whether scheduled

through the clinic or the TSC, these calls require knowledge of the service being scheduled as well as time listening to the patient's needs. With the recent fielding of ADS placing additional demands on clinic staff, time is a resource they can ill afford to spend on unnecessary tasks.

Yet most clinics are reluctant to turn over appointing to the TSC. This facility cannot reach optimal effectiveness while continuing to perform work which the MCSC is being paid to do. PAS staffing levels in the TSC (six appointment clerks and two supervisory personnel) are inadequate to answer those calls currently received. As Table 3 shows, nearly two thirds of all calls to the TSC are sent to a queue. The TSC requires significantly more staff to absorb this workload. Current TSC staff work diligently and continue to develop a working knowledge of each of the clinics and a rapport with MTF staff; but even their best efforts will fall short of meeting the demand without support from their corporate headquarters. Having collected, summarized and analyzed data for each of the clinics being studied, the researcher then presented the data with preliminary results to clinic chiefs for their interpretation and assessment. Each of these clinicians was eager to review the findings and offer input, and none seemed surprised by the results.

Adult Primary Care

The APC clinic averaged nearly 3300 visits per month during the observation period, with nine out of every ten appointments resulting in an actual visit. A nine percent cancellation/no-show rate combined with fourteen percent of templated appointments not booked created over twenty percent unused appointments. Nearly one third of visits were by walk-in, likely filling those vacant slots. Over one third of visits were by Medicare-eligible beneficiaries, many of whom walked in for routine visits such as chronic medication refills and blood pressure checks. The Medicare percentage steadily declined during the year, however, from a high in May of 45% to its low in February of 32%. Slightly over half the visits were by prime enrollees.

Dermatology

The Derm clinic averaged about 650 visits per month during the observation period, most of which were by referral from primary care providers. Not surprisingly, nearly ten percent came from outside the WBAMC catchment area, due to the clinic's regional referral base. About 85% of total appointments resulted in actual visits, with only 55% appointed visits. Over one fourth of clinic visits were by walk-in; quite unusual for a specialty referral clinic. However, the walk-in wart clinic conducted two afternoons per week accounted for most of these cases. The remainder

were same-day referrals and those referred without an appointment filling slots vacated by cancellations/no-shows. Over 60% of all visits were prime beneficiaries, and about one fourth were Medicare-eligible. Appointed visits as a percentage of the total steadily increased during the year, along with a corresponding decrease in walk-ins. Of particular interest was a good news story regarding referrals out to the network, as shown in Table 4. The total number of referrals to the network, as well as the percent prime cases sent to outside providers, dropped dramatically throughout the year. Intensive management within the clinic brought the total number of network referrals down from 71 to 13, and prime referrals from 45 to 0. This is the type of performance which will lead to success under TRICARE and EBC.

General Outpatient/Emergency Room

Though separate clinics with different functions, their close proximity and staff interactions would render an independent analysis of one without the other ineffectual. The most interesting findings came in the form of differences in visitation patterns among beneficiary categories. The proportion of TRICARE Prime enrollees' ER visits far exceeded that for the GOC, suggesting either that their usage here is most often for emergent or urgent conditions, or that they are seeking routine primary care

when clinic visits are unavailable. Analysis of patient triage categories is underway to further study this phenomenon, but was beyond the scope of this project. Prime beneficiaries did represent over one fourth of GOC visits, however, indicating perhaps that primary care clinic hours may not fully satisfy their needs. CHAMPUS-eligible non-enrolled and Medicare-eligible beneficiaries, conversely, utilized the GOC at a much higher rate than the ER. This pattern may be reflective of the increasing difficulty of attaining appointments for these beneficiaries in the regularly-scheduled clinics throughout the hospital. Indeed, not only was the trend for non-prime beneficiaries to seek care in the GOC more frequently than prime enrollees do, but the gap also has widened (Figure 5). ER usage rates (shown in dashed red) were relatively stable, increasing slightly for Prime and decreasing slightly for non-prime. Use rates for the GOC (shown in solid blue) diverged, with the percent of non-prime jumping from 59 to 75% while the percent prime dropped from 36 to 20% between May and February. This metric, by illustrating service use outside the PCM sites, may provide a useful future indicator of primary care performance in meeting the needs of the enrolled population.

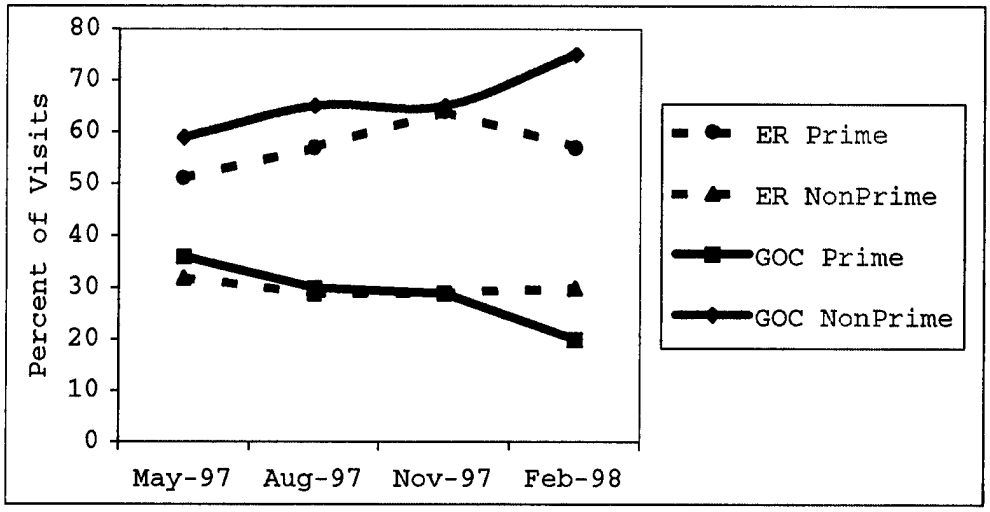

Figure 5. GOC-ER Visits, by Prime and NonPrime.

Consideration of appointment status is less meaningful here than for other clinics due to the occurrence-driven nature of the emergent/urgent care mission. Even with the crucial role WBAMC plays in the El Paso community as a trauma care center, the proportion of ER patients not eligible for care in military MTFs was relatively small (less than 6%). Of some concern, though, over one fourth of total GOC appointments were unused. This occurred primarily as a result of the facility's inability to appoint same-day visits on weekends. Additionally, a relatively large proportion (13%) of patients came from outside El Paso, as might be expected of an emergency department providing episodic care to those in need.

Pediatrics/Adolescent Clinic

This high-volume clinic averaged over 4800 visits per month, with a large variation in total visits, ranging from a low of 3905 in November to a high of 6863 in May. While its walk-in rate was relatively low (about 16%), clinic efficiency suffered due to high rates of cancellation/no-shows (17%) and unbooked appointments (22%). A combination of several factors contributed to these high rates. Clinic templates and schedules were input and controlled internally, and not coordinated through PAS; therefore, there were no organizational controls or planning of appointment types or distribution based on historical trends. For example, over 80% of clinic appointment types established by the clinic were same-day or routine follow-ups, but less than one percent were for new appointments.

Additionally, clinic protocols did not allow primary care visits to be booked into unfilled specialty slots within the clinic, leaving these appointments open. This constrained primary care appointment availability for PAS clerks, and resulted in unbooked appointments. Without coordination through PAS, clinic schedules may also be changed on short notice within the clinic without visibility of those who are trying to book patients into these appointments. This is like shooting at a moving target, and too often the shot has missed. While these factors may not

explain all unbooked or cancellation/no-shows, it may account for many of those occurring due to clinic procedures. The clinic has recently begun to address many of these issues by planning services based on historical trends, revising protocols, and coordinating templates through PAS.

Physical Therapy

The PT clinic, with two military physical therapists and several technicians assigned, was most sensitive to staffing shortfalls during the spring and summer when one therapist was deployed on military duties outside the MTF. Their monthly visits fluctuated from a low of 1252 in August to 2261 in February.

But other management decisions unrelated to staffing resulted in a drastic shift in clinic performance between the first two and last two months observed. The clinic changed in October from primarily a walk-in based service to predominantly appointed, at the same time shifting appointing responsibility to the TSC. Prior to these changes only about 10% of total visits were appointed, with about 85% walk-ins and about 5% cancellation/no-shows. After the change these numbers shifted dramatically to 55% appointed visits, 16% walk-in, and 29% cancellation/no-shows. The percent of unbooked appointments also appeared to rise, although complete data from before the change were not

available for comparison. The resulting changes in appointed and walk-in visits were as expected, and should continue to improve as TSC and clinic staffs become more adept at the new procedures. The large jump in cancellation/ no-shows is troubling, however. Some of this difference may be explained by customer noncompliance or confusion due to incomplete information on the new system.

A more pressing concern was the lack of familiarization and coordination between clinic and TSC staff. Detailed protocols and templates and a thorough knowledge of clinic capabilities are required for TSC personnel to effectively book services in this clinic, where certain visits/procedures may be performed by technicians while others require therapists. The clinic chief expressed frustration with an inability to coordinate with TSC personnel. Such communication barriers must be overcome to operate more effectively as partners.

Finally, PT referrals to the TRICARE network (Table 4) do not seem to show much improvement, either in the total number of referrals or the percent of prime referred out. But since August, when one of two therapists was deployed, both the number and percent of prime referrals out have steadily decreased, with only those services beyond internal capabilities sent to the network. The percent of non-prime visits in the clinic has remained around 30%; clinic staff

must continue to assess the need for these visits and the modalities involved to ensure that space is available without detracting from access for enrollees.

Conclusions and Recommendations

The operational milieu of WBAMC as an organization, and the observed clinics in particular, has undergone multiple dramatic changes in the past year. Not only has it implemented TRICARE, transitioned to a consolidated TRICARE Central Region, and dissolved a regional medical command; it has converted its entire clinical information systems to the DoD-standard CHCS, closed several graduate medical education programs, and has most recently fielded the ambulatory data system (ADS). Under such demanding and tumultuous circumstances, WBAMC staff have performed remarkably well in providing uninterrupted quality health care. Continued changes are required to move the organization successfully into EBC during the coming year. Such metrics as discussed in this project will help provide the management indicators to help providers better understand the resource implications of clinical decisions.

These results may be used, in concert with other metrics, to assess the appropriateness of clinical practice patterns under TRICARE. They may illuminate the need for process improvements and policy revisions to optimize resources and satisfy customers. In particular, they may

illuminate opportunities to gain financially by retaining care for the enrolled population within the MTF where possible, and referring to the network only after exhausting all internal avenues.

All of the clinic chiefs welcomed the researcher's analyses and offered keen insights, without which this study would not have been possible. Their positive feedback substantiated the need to provide well-defined, discernable metrics based on accurate data in a timely fashion. Such powerful information enables those responsible for a process or function to influence outcomes, rather than reporting on results once it is too late to effect change. This must be our guiding premise when developing metrics and information systems for our organizations.

Further study of customer demand patterns is needed to better understand and market to the needs of the eligible beneficiary population. Specific areas for emphasis might include time-based demand factors as indicators of whether clinic hours are most convenient; assessment of emergency department visits as signifying limitations on access in primary care; and analysis of peak demand times in PAS, and the effects of queuing on customer satisfaction.

Finally, the value to the researcher of conducting the research for this project has been immeasurable. The detailed knowledge of the PAS, interaction with clinical and

administrative staff, and familiarity with clinic operations gained have added immensely to the educational value of this program.

References

Assistant Secretary of Defense for Health Affairs. (1996, September 26). Policy for After-Hours Care for TRICARE prime enrollees (HA Policy 96-060).

Assistant Secretary of Defense for Health Affairs. (1997, March 18). Policy memorandum to refine policy for priority use of medical treatment facilities by TRICARE prime enrollees (HA Policy 97-041).

Assistant Secretary of Defense for Health Affairs. (1997, April 7). Policy on medical treatment facility enrollment-based capitation resource allocation for the military health services system (HA Policy 97-043).

Brown, F. W. (1994). Paddling permanent whitewater: managing within the paradigm shifts in military medicine. Military Medicine, 159, 622-626.

Chessare, J. B., & Herrick, R. R. (1996). Business strategies for the survival of the academic medical center. Academic Medicine, 71(3), 215-217.

Department of Defense Office of the Civilian Health and Medical Program of the Uniformed Services. (1996, June 27). Managed Care Support Contract for TRICARE Regions 7 and 8. Contract Number MDA906-96-C-004, Aurora, Colorado.

Department of Defense Quality Management Report. (1995). [On-line]. Available: http://www.ha.osd.mil/cs/95qmr-2a.html#section2

Feiselmann, J. F., & Hendryx, M. S. (1994). Characteristics of self-referred patients. Academic Medicine, 69, (5), 376-381.

Franco, S. M., Mitchell, C. K., & Buzon, R. M. (1997, February). Primary care physician access and gatekeeping: a key to reducing emergency department use. Clinical Pediatrics, 63-68.

Gilbert, J. A. (1990). Productivity Management: A Step-by-Step Guide for Health Care Professionals. Washington, DC: American Hospital Association.

Grady, J. E. (1996, May). Military health care: Joseph says access is major health care problem. AUSA News, p. 10.

Grumbach, K., Keane, D., & Bindman, A. (1993). Primary care and public emergency department overcrowding. American Journal of Public Health, 83, (3), 372-378.

Imai, W. K., & Schydlower, M. (1994). Adolescent health needs and access to care in the Army medical system. Texas Medicine, 90, (3), 62-66.

Joseph, S. C. (1997). Opening remarks. TRICARE Conference [On-line]. Available: http://www.ha.osd.mil/./tricare/drj-197.html

Kellermann, A. L. (1994). Nonurgent emergency department visits: meeting an unmet need. JAMA, 271, (24), 1953-1954.

McGee, W. M., & Hudak, R. P. (1995). Reengineering medical treatment facilities fir TRICARE: the medical group practice model. Military Medicine, 160, (5), 235-239.

Military health care—an update: GAO says TRICARE is on target. (1996, May). AUSA News, p. 9.

Military Health Services System Performance Report Card Handbook. (1997, September) [On-line]. Available: http://www.ha.osd.mil/./milonly/reptcard/hndbk997.html

Mintzberg, H. (1997). Toward healthier hospitals. Health Care Management Review,22, (4), 9-18.

Network news: an exclusive analysis predicts that three basic models will emerge. (1997, February 20). Hospitals & Health Networks, 28-29.

Owen, S. A., Maeyens, E., & Weary, P. E. (1997). Patients' opinions regarding direct access to dermatologic specialty care. Journal of the American Academy of Dermatology, 36, (2, Pt. 1), 250-256.

Rutan, H. (1997). Large-scale Conversion of Clinical Hospital Information Systems. Manuscript in preparation.

Science Applications International Corporation (1996, July 29). Composite Health Care System Patient Appointment and Scheduling/Managed Care Program Enrollment Processing Presenter's Guide (SAIC/CHCS Doc. TC-4.5-0559).

Status of military medicine: Statement before the Subcommitte on Defense of the Appropriations Committee,

House of Representatives, 105th Congress (1997, March 19) (statement of Stephen C. Joseph).

Stewart, A. L., Grumbach, K., Osmond, D. H., Vranizan, K., Komaromy, M., & Bindman, A. B. (1997). Primary care and patient perceptions of access to care. The Journal of Family Practice, 44,(2), 177-185.

Subvention: getting down to details. (1997). U.S. Medicine, 33, (17 & 18), 1, 51.

Sunshine, J. (1997, May). TRICARE: preserving the military's inhouse care system. Federal Practitioner [On-line]. Available: http://www.ha.osd.mil/./tricare/sunshine.html

Tilson, W. B. (1996). A simulated analysis of the accessibility to healthcare services in Ireland Army Community Hospital through the patient appointment system. Unpublished master's thesis, U.S. Army-Baylor University Graduate Program in Health Care Administration, Fort Sam Houston, Texas.

Tomich, N. (1997). 'EBC' on TriCare's center stage. U.S. Medicine, 33, (17 & 18), 1, 46, 51.

Yin, R. K. (1994). Case study research: Design and methods (2nd ed.). London: Sage.

Appendix A

TOTAL PATIENT VISITS (5 CLINICS)
MAY/AUG/NOV 97; FEB 98

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	63552									
ACTUAL VISITS	56310	88.6%	56310							
APPOINTED VISITS	40584	63.9%		4173	5529	21541	5705	1542	2094	
WALK-INS	13159	20.7%		1758	1402	5134	3922	390	535	
TEL-CON	2567	4.0%		84	278	1515	573	44	73	
ADMIN/OCC SVC	336	0.5%		18	61	150	89	8	10	
CANCELLATIONS/NO SHOWS	6906	10.9%		1056	757	4075	525	274	237	
				7089	8027	32415	10814	2258	2949	63552
				11.2%	12.6%	51.0%	17.0%	3.6%	4.6%	

ACTUAL VISITS BY ACV STATUS

ACTIVE DUTY	6032	10.7%
CHAMPUS (STANDARD)	7209	12.8%
ENROLLED (ADD/NADD)	28190	50.1%
MEDICARE ELIGIBLE (>64)	10200	18.1%
NOT ELIGIBLE	1976	3.5%
BLANK	2703	4.8%
TOTAL	56310	

ACTUAL VISITS BY DMIS ID

NO CODE	21670	38.5%
0108 - WBAMC	23043	40.9%
1617 - CTMC	3932	7.0%
6907 - REGION 7	5407	9.6%
OTHER	2258	4.0%
TOTAL	56310	

ACTUAL VISITS BY ZIP CODE

79904	7004	12.4%
79906	5007	8.9%
79907	607	1.1%
79908	2541	4.5%
79912	2491	4.4%
79915	743	1.3%
79916	2472	4.4%
79924	12802	22.7%
79925	3551	6.3%
79927	596	1.1%
79930	2007	3.6%
79934	3359	6.0%
79935	987	1.8%
79936	3454	6.1%
OTHER	6361	11.3%
UNKNOWN	2328	4.1%
	56310	

	APC	DERM	GOC*	PEDS	PT	AVG
Percent Actual Visits/Total	90%	85%	92%	83%	81%	89%
Percent Appointed Visits	50%	55%	65%	62%	38%	64%
Percent Walk-ins	32%	26%	26%	16%	43%	21%
Cancel/No-show Rate	9%	14%	7%	17%	19%	11%
Percent Medicare/Actual Visits	37%	26%	20%	N/A	13%	18%

*NOTE: Percentages reflect visits to GOC, except Medicare Visits, which also include ER.

Appendix A-1

TOTAL PATIENT VISITS (5 CLINICS)
MAY 1997

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	16898									
ACTUAL VISITS	15136	89.6%	15136							
APPOINTED VISITS	10919	64.6%		749	1796	5843	1488	447	596	
WALK-INS	4094	24.2%		640	521	1574	1079	118	161	
TEL-CON	123	0.7%		4	31	49	32	4	3	
ADMIN/OCC SVC	81	0.5%		4	28	34	10	1	4	
CANCELLATIONS/NO SHOWS	1681	9.9%		106	257	1046	160	46	67	
				1503	2633	8546	2769	616	831	16898
				8.9%	15.6%	50.6%	16.4%	3.6%	4.9%	

ACTUAL VISITS BY ACV STATUS

ACTIVE DUTY	1393	9.2%
CHAMPUS (STANDARD)	2348	15.5%
ENROLLED (ADD/NADD)	7466	49.3%
MEDICARE (>64 yrs)	2599	17.2%
NOT ELIGIBLE	569	3.8%
BLANK	761	5.0%
TOTAL	15136	

ACTUAL VISITS BY DMIS ID

NO CODE	6046	39.9%
0108 - WBAMC	5095	33.7%
1617 - CTMC	827	5.5%
6907 - REGION 7	2439	16.1%
OTHER	729	4.8%
TOTAL	15136	

ACTUAL VISITS BY ZIP CODE

79904	1978	13.1%
79906	1601	10.6%
79907	141	0.9%
79908	772	5.1%
79912	681	4.5%
79915	225	1.5%
79916	608	4.0%
79924	3360	22.2%
79925	911	6.0%
79927	163	1.1%
79930	525	3.5%
79934	1012	6.7%
79935	243	1.6%
79936	950	6.3%
OTHER	1716	11.3%
UNKNOWN	250	1.7%
	15136	

Appendix A-2

TOTAL PATIENT VISITS (5 CLINICS)
AUGUST 1997

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	15383									
ACTUAL VISITS	13934	90.6%	13934							
APPOINTED VISITS	9372	60.9%		857	1215	5065	1424	314	497	
WALK-INS	3768	24.5%		666	393	1366	1021	154	168	
TEL-CON	794	5.2%		31	81	458	187	13	24	
ADMIN/OCC SVC	83	0.5%		4	12	32	29	2	4	
CANCELLATIONS/NO SHOWS	1366	8.9%		84	158	914	115	42	53	
				1642	1859	7835	2776	525	746	15383
				10.7%	12.1%	50.9%	18.0%	3.4%	4.8%	

ACTUAL VISITS BY ACV STATUS

ACTIVE DUTY	1554	11.2%
CHAMPUS (STANDARD)	1689	12.1%
ENROLLED (ADD/NADD)	6889	49.4%
MEDICARE (>64 yrs)	2632	18.9%
NOT ELIGIBLE	481	3.5%
BLANK	689	4.9%
TOTAL	13934	

ACTUAL VISITS BY DMIS ID

NO CODE	5436	39.0%
0108 - WBAMC	5365	38.5%
1617 - CTMC	1022	7.3%
6907 - REGION 7	1552	11.1%
OTHER	559	4.0%
TOTAL	13934	

ACTUAL VISITS BY ZIP CODE

79904	1763	12.7%
79906	1117	8.0%
79907	137	1.0%
79908	546	3.9%
79912	674	4.8%
79915	161	1.2%
79916	651	4.7%
79924	3185	22.9%
79925	884	6.3%
79927	154	1.1%
79930	461	3.3%
79934	780	5.6%
79935	267	1.9%
79936	855	6.1%
OTHER	1500	10.8%
UNKNOWN	799	5.7%
	13934	

Appendix A-3

TOTAL PATIENT VISITS (5 CLINICS)
NOVEMBER 1997

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	15128									
ACTUAL VISITS	13249	87.6%	13249							
APPOINTED VISITS	9694	64.1%		1216	1180	4964	1377	404	553	
WALK-INS	2811	18.6%		234	289	1183	895	68	142	
TEL-CON	744	4.9%		20	77	441	170	9	27	
ADMIN/OCC SVC	66	0.4%		4	4	36	18	3	1	
CANCELLATIONS/NO SHOWS	1813	12.0%		371	168	977	135	103	59	
				1845	1718	7601	2595	587	782	15128
				12.2%	11.4%	50.2%	17.2%	3.9%	5.2%	

ACTUAL VISITS BY ACV STATUS

ACTIVE DUTY	1470	11.1%
CHAMPUS (STANDARD)	1546	11.7%
ENROLLED (ADD/NADD)	6588	49.7%
MEDICARE (>64 yrs)	2442	18.4%
NOT ELIGIBLE	481	3.6%
BLANK	722	5.4%
TOTAL	13249	

ACTUAL VISITS BY DMIS ID

NO CODE	5103	38.5%
0108 - WBAMC	5910	44.6%
1617 - CTMC	955	7.2%
6907 - REGION 7	796	6.0%
OTHER	485	3.7%
TOTAL	13249	

ACTUAL VISITS BY ZIP CODE

79904	1553	11.7%
79906	1183	8.9%
79907	162	1.2%
79908	590	4.5%
79912	527	4.0%
79915	171	1.3%
79916	582	4.4%
79924	2977	22.5%
79925	839	6.3%
79927	132	1.0%
79930	515	3.9%
79934	767	5.8%
79935	216	1.6%
79936	825	6.2%
OTHER	1568	11.8%
UNKNOWN	642	4.8%
	13249	

Appendix A-4

TOTAL PATIENT VISITS (5 CLINICS)
FEBRUARY 1998

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	16143									
ACTUAL VISITS	13991	86.7%	13991							
APPOINTED VISITS	10599	65.7%		1351	1338	5669	1416	377	448	
WALK-INS	2486	15.4%		218	199	1011	927	50	64	
TEL-CON	906	5.6%		29	89	567	184	18	19	
ADMIN/OCC SVC	106	0.7%		6	17	48	32	2	1	
CANCELLATIONS/NO SHOWS	2046	12.7%		495	174	1138	115	83	58	
				2099	1817	8433	2674	530	590	16143
				13.0%	11.3%	52.2%	16.6%	3.3%	3.7%	

ACTUAL VISITS BY ACV STATUS		
ACTIVE DUTY	1615	11.5%
CHAMPUS (STANDARD)	1626	11.6%
ENROLLED (ADD/NADD)	7247	51.8%
MEDICARE (>64 yrs)	2527	18.1%
NOT ELIGIBLE	445	3.2%
BLANK	531	3.8%
TOTAL	13991	

ACTUAL VISITS BY DMIS ID		
NO CODE	5085	36.3%
0108 - WBAMC	6673	47.7%
1617 - CTMC	1128	8.1%
6907 - REGION 7	620	4.4%
OTHER	485	3.5%
TOTAL	13991	

ACTUAL VISITS BY ZIP CODE		
79904	1710	12.2%
79906	1106	7.9%
79907	167	1.2%
79908	633	4.5%
79912	609	4.4%
79915	186	1.3%
79916	631	4.5%
79924	3280	23.4%
79925	917	6.6%
79927	147	1.1%
79930	506	3.6%
79934	800	5.7%
79935	261	1.9%
79936	824	5.9%
OTHER	1577	11.3%
UNKNOWN	637	4.6%
	13991	

Appendix B

TOTAL PATIENT VISITS (ADULT PRIMARY CARE)
MAY/AUG/NOV 97; FEB 98

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	14716									
ACTUAL VISITS	13181	89.6%	13181							
APPOINTED VISITS	7289	49.5%		538	331	4474	1686	178	82	
WALK-INS	4678	31.8%		132	287	1456	2725	45	32	
TEL-CON	1214	8.2%		55	99	548	482	17	13	
ADMIN/OCC SVC	148	1.0%		9	14	61	59	3	2	
CANCELLATIONS/NO SHOWS	1387	9.4%		85	65	917	279	29	13	
				819	796	7456	5231	272	142	14716
APPTS AVAIL TO BOOK*	8520			5.6%	5.4%	50.7%	35.5%	1.8%	1.0%	
PERCENT UNBOOKED*		14.4%								

*NOTE: DATA UNAVAILABLE FOR MAY 97; AVERAGE FOR OTHER THREE MONTHS USED TO ESTIMATE.

ACTUAL VISITS BY ACV STATUS

ACTIVE DUTY	725	5.5%
CHAMPUS (STANDARD)	717	5.4%
ENROLLED (ADD/NADD)	6478	49.1%
MEDICARE ELIGIBLE (>64)	4893	37.1%
NOT ELIGIBLE	240	1.8%
BLANK	128	1.0%
TOTAL	13181	

ACTUAL VISITS BY DMIS ID

NO CODE	5841	44.3%
0108 - WBAMC	6257	47.5%
1617 - CTMC	186	1.4%
6907 - REGION 7	723	5.5%
OTHER	174	1.3%
TOTAL	13181	

ACTUAL VISITS BY ZIP CODE

79904	1463	11.1%
79906	449	3.4%
79907	169	1.3%
79908	273	2.1%
79912	533	4.0%
79915	263	2.0%
79916	180	1.4%
79924	4386	33.3%
79925	1131	8.6%
79927	192	1.5%
79930	429	3.3%
79934	535	4.1%
79935	328	2.5%
79936	736	5.6%
OTHER	1450	11.0%
UNKNOWN	664	5.0%
	13181	

	May-97	Aug-97	Nov-97	Feb-98	Avg
Percent Actual Visits/Total	90%	91%	90%	88%	90%
Percent Appointed Visits	54%	49%	50%	47%	50%
Percent Walk-ins	37%	32%	30%	30%	32%
Cancel/No-show Rate	10%	8%	9%	11%	9%
Percent Medicare/Actual Visits	45%	38%	35%	32%	37%

Appendix C

TOTAL PATIENT VISITS (DERMATOLOGY)
MAY/AUG/NOV 97; FEB 98

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	3063									
ACTUAL VISITS	2610	85.2%	2610							
APPOINTED VISITS	1682	54.9%		326	128	694	436	64	34	
WALK-INS	786	25.7%		147	64	360	173	20	22	
TEL-CON	142	4.6%		17	9	53	58	4	1	
ADMIN/OCC SVC	21	0.7%		0	3	9	8	1	0	
CANCELLATIONS/NO SHOWS	432	14.1%		128	26	196	51	21	10	
				618	230	1312	726	110	67	3063
APPTS AVAIL TO BOOK*	1839			20.2%	7.5%	42.8%	23.7%	3.6%	2.2%	
PERCENT UNBOOKED*		8.5%								

*NOTE: DATA UNAVAILABLE FOR MAY 97; AVERAGE FOR OTHER THREE MONTHS USED TO ESTIMATE.

ACTUAL VISITS BY ACV STATUS		
ACTIVE DUTY	490	18.8%
CHAMPUS (STANDARD)	201	7.7%
ENROLLED (ADD/NADD)	1107	42.4%
MEDICARE (>64 yrs)	667	25.6%
NOT ELIGIBLE	88	3.4%
BLANK	57	2.2%
TOTAL	2610	

ACTUAL VISITS BY DMIS ID		
NO CODE	1006	38.5%
0084 - HOLLOMAN	82	3.1%
0108 - WBAMC	921	35.3%
0327 - MACAFEE TMC	78	3.0%
1617 - CTMC	277	10.6%
6907 - REGION 7	201	7.7%
OTHER	45	1.7%
TOTAL	2610	

ACTUAL VISITS BY ZIP CODE		
79904	257	9.8%
79906	151	5.8%
79907	18	0.7%
79908	84	3.2%
79912	151	5.8%
79915	26	1.0%
79916	97	3.7%
79924	609	23.3%
79925	198	7.6%
79927	21	0.8%
79930	88	3.4%
79934	135	5.2%
79935	34	1.3%
79936	141	5.4%
OTHER	463	17.7%
UNKNOWN	137	5.2%
	2610	

	May-97	Aug-97	Nov-97	Feb-98	Avg
Actual Visits/Total	87%	85%	84%	84%	85%
Appointed Visits/Total	47%	53%	59%	61%	55%
Walk-ins/Total Visits	32%	27%	21%	21%	26%
Cancel/No-show Rate	13%	14%	15%	15%	14%
Medicare Eligible/Actual Visits	30%	21%	26%	25%	26%
Out-of-Area/Actual Visits	17%	17%	20%	17%	18%

Appendix D

TOTAL PATIENT VISITS (GENERAL OUTPATIENT/ER)
MAY/AUG/NOV 97; FEB 98

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	19863									
ACTUAL VISITS	19185	96.6%	19185							
APPOINTED VISITS	17279	87.0%		1950	3253	6449	3318	838	1471	
WALK-INS	1818	9.2%		125	308	632	565	50	121	
TEL-CON	88	0.4%		5	18	30	33	1	1	
ADMIN/OCC SVC	86	0.4%		4	30	28	22	1	1	
CANCELLATIONS/NO SHOWS	592	3.0%		48	168	210	134	24	25	
				2132	3777	7349	4072	914	1619	19863
				10.7%	19.0%	37.0%	20.5%	4.6%	8.2%	

EMERGENCY ROOM

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	14519									
ACTUAL VISITS	14292	98.4%	14292							
APPOINTED VISITS	13804	95.1%		1933	2158	5603	1981	775	1354	
WALK-INS	450	3.1%		55	61	193	54	21	66	
TEL-CON	38	0.3%		4	9	18	5	1	1	
ADMIN/OCC SVC	4	0.0%		1	1	2	0	0	0	
LWOBS	223	1.5%		27	40	106	24	9	17	
				2020	2269	5922	2064	806	1438	14519
				13.9%	15.6%	40.8%	14.2%	5.6%	9.9%	

GENERAL OUTPATIENT

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	5344									
ACTUAL VISITS	4893	91.6%	4893							
APPOINTED VISITS	3475	65.0%		17	1095	846	1337	63	117	
WALK-INS	1368	25.6%		70	247	439	511	29	55	
TEL-CON	50	0.9%		1	9	12	28	0	0	
ADMIN/OCC SVC	82	1.5%		3	29	26	22	1	1	
CANCELLATIONS/NO SHOWS	369	6.9%		21	128	104	110	15	8	
				112	1508	1427	2008	108	181	5344
APPTS AVAIL TO BOOK*	4282			2.1%	28.2%	26.7%	37.6%	2.0%	3.4%	
PERCENT UNBOOKED*		18.8%	*NOTE:	DATA UNAVAILABLE FOR MAY 97; AVERAGE						
				FOR OTHER THREE MONTHS USED TO ESTIMATE.						

ACTUAL VISITS BY ACV STATUS			ER		GOC	
ACTIVE DUTY	2097	10.9%	1992	13.9%	105	2.1%
CHAMPUS (STANDARD)	3579	18.7%	2228	15.6%	1351	27.6%
ENROLLED (ADD/NADD)	7111	37.1%	5814	40.7%	1297	26.5%
MEDICARE (>64 yrs)	3916	20.4%	2040	14.3%	1876	38.3%
NOT ELIGIBLE	889	4.6%	797	5.6%	92	1.9%
BLANK	1593	8.3%	1421	9.9%	172	3.5%
TOTAL	19185		14292		4893	

ACTUAL VISITS BY DMIS ID			ER		GOC	
NO CODE	9820	51.2%	6375	44.6%	3445	70.4%
0108 - WBAMC	5637	29.4%	4557	31.9%	1080	22.1%
1617 - CTMC	1470	7.7%	1428	10.0%	42	0.9%
6907 - REGION 7	1452	7.6%	1219	8.5%	233	4.8%
OTHER	806	4.2%	713	5.0%	93	1.9%
TOTAL	19185		14292		4893	

ACTUAL VISITS BY ZIP CODE			ER		GOC	
79904	2227	11.6%	1705	11.9%	522	10.7%
79906	1370	7.1%	1222	8.6%	148	3.0%
79907	237	1.2%	150	1.0%	87	1.8%
79908	705	3.7%	607	4.2%	98	2.0%
79912	792	4.1%	573	4.0%	219	4.5%
79915	290	1.5%	177	1.2%	113	2.3%
79916	998	5.2%	955	6.7%	43	0.9%
79924	4469	23.3%	2988	20.9%	1481	30.3%
79925	1257	6.6%	822	5.8%	435	8.9%
79927	203	1.1%	144	1.0%	59	1.2%
79930	745	3.9%	548	3.8%	197	4.0%
79934	904	4.7%	693	4.8%	211	4.3%
79935	362	1.9%	255	1.8%	107	2.2%
79936	1208	6.3%	874	6.1%	334	6.8%
OTHER	2474	12.9%	1848	12.9%	626	12.8%
UNKNOWN	944	4.9%	731	5.1%	213	4.4%
	19185		14292		4893	

Appendix E

TOTAL PATIENT VISITS (PEDIATRIC CLINIC)
MAY/AUG/NOV 97; FEB 98

				A	C	E	N	Blank	
TOTAL APPOINTMENTS	19213								
ACTUAL VISITS	15934	82.9%	15934						
APPOINTED VISITS	11816	61.5%		51	1726	9438	206	395	
WALK-INS	2995	15.6%		31	508	2234	55	167	
TEL-CON	1123	5.8%		7	152	884	22	58	
ADMIN/OCC SVC	79	0.4%		5	14	52	2	6	
CANCELLATIONS/NO SHOWS	3200	16.7%		17	444	2536	71	132	
				111	2844	15144	356	758	19213
APPTS AVAIL TO BOOK*	15051.4			0.6%	14.8%	78.8%	1.9%	3.9%	
PERCENT UNBOOKED*		21.5%							

*NOTE: DATA UNAVAILABLE FOR MAY 97; AVERAGE FOR OTHER THREE MONTHS USED TO ESTIMATE.

ACTUAL VISITS BY ACV STATUS

ACTIVE DUTY	89	0.6%
CHAMPUS (STANDARD)	2386	15.0%
ENROLLED (ADD/NADD)	12556	78.8%
NOT ELIGIBLE	283	1.8%
BLANK	620	3.9%
TOTAL	15934	

ACTUAL VISITS BY DMIS ID

NO CODE	3120	19.6%
0108 - WBAMC	9155	57.5%
6907 - REGION 7	2946	18.5%
OTHER	713	4.5%
TOTAL	15934	

ACTUAL VISITS BY ZIP CODE

79904	2442	15.3%
79906	2643	16.6%
79907	149	0.9%
79908	1218	7.6%
79912	785	4.9%
79915	141	0.9%
79916	435	2.7%
79924	2372	14.9%
79925	669	4.2%
79927	157	1.0%
79930	573	3.6%
79934	1460	9.2%
79935	187	1.2%
79936	1127	7.1%
OTHER	1347	8.5%
UNKNOWN	229	1.4%
	15934	

	May-97	Aug-97	Nov-97	Feb-98	Avg
Percent Actual Visits/Total	85%	82%	82%	82%	83%
Percent Appointed Visits	66%	57%	57%	64%	62%
Percent Walk-ins	18%	18%	16%	9%	16%
Cancel/No-show Rate	15%	18%	18%	17%	17%

Appendix F

TOTAL PATIENT VISITS (PHYSICAL THERAPY)
MAY/AUG/NOV 97; FEB 98

				A	C	E	M	N	Blank	
TOTAL APPOINTMENTS	6697									
ACTUAL VISITS	5400	80.6%	5400							
APPOINTED VISITS	2518	37.6%		1308	91	486	265	256	112	
WALK-INS	2882	43.0%		1323	235	452	459	220	193	
TEL-CON	0	0.0%		0	0	0	0	0	0	
ADMIN/OCC SVC	2	0.0%		0	0	0	0	1	1	
CANCELLATIONS/NO SHOWS	1295	19.3%		778	54	216	61	129	57	
				3409	380	1154	785	606	363	6697
APPTS AVAIL TO BOOK*	5841			50.9%	5.7%	17.2%	11.7%	9.0%	5.4%	
PERCENT UNBOOKED*		56.9%								

*NOTE: DATA UNAVAILABLE FOR MAY 97; AVERAGE FOR OTHER THREE MONTHS USED TO ESTIMATE.

ACTUAL VISITS BY ACV STATUS		
ACTIVE DUTY	2631	48.7%
CHAMPUS (STANDARD)	326	6.0%
ENROLLED (ADD/NADD)	938	17.4%
MEDICARE (>64 yrs)	724	13.4%
NOT ELIGIBLE	476	8.8%
BLANK	305	5.6%
TOTAL	5400	

ACTUAL VISITS BY DMIS ID		
NO CODE	1883	34.9%
0108 - WBAMC	1073	19.9%
1617 - CTMC	1999	37.0%
6907 - REGION 7	85	1.6%
OTHER	360	6.7%
TOTAL	5400	

ACTUAL VISITS BY ZIP CODE		
79904	615	11.4%
79906	394	7.3%
79907	34	0.6%
79908	261	4.8%
79912	230	4.3%
79915	23	0.4%
79916	762	14.1%
79924	966	17.9%
79925	296	5.5%
79927	23	0.4%
79930	172	3.2%
79934	325	6.0%
79935	76	1.4%
79936	242	4.5%
OTHER	627	11.6%
UNKNOWN	354	6.6%
	5400	

	May-97	Aug-97	Nov-97	Feb-98	Avg
Percent Actual Visits/Total	94%	97%	71%	71%	81%
Percent Appointed Visits	12%	8%	54%	55%	38%
Percent Walk-ins	82%	89%	17%	16%	43%
Cancel/No-show Rate	6%	3%	29%	29%	19%
Percent Medicare/Actual Visits	18%	9%	14%	13%	13%
Percent CTMC/Actual Visits	35%	38%	38%	37%	37%

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13. ABSTRACT *(Maximum 200 words)*

This study examines access to outpatient services at William Beaumont Army Medical Center for all beneficiary groups in Adult Primary Care, Pediatrics, General Outpatient/Emergency Room, Physical Therapy and Dermatology clinics. Analysis suggests that a large proportion of outpatient capacity is either unplanned (walk-ins averaged 21% of visits), or is not being used (25% unbooked and 11% cancellation/no-shows on average). More effective use of the patient appointing process is required for clinics to exert more control over workload distribution and increase operating efficiency. Clinics booked over half of all new appointments, although a contractor had been paid to schedule these visits; this workload must be shifted to the contractor. Overall, however, the observed clinics showed improvement in awareness of TRICARE and accommodation of prime enrollees' demand for services. Prime enrollees made up a slightly larger proportion of total visits as enrollment increased, and prime referrals to the network decreased dramatically as clinicians more intensively managed their care within the facility. Additionally, increasing use of the general outpatient clinic by non-prime suggests that their access to the primary care clinics has lessened as prime enrollees are better accommodated. These results indicate progress toward effectively managing the health of the enrolled population.

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